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Artificial blood comprising haemoglobin-including liposome - with polyethylene glycol bound hydrogenated natural phospho-lipid

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JP 4005242	A	19920109				199208 B
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JP 3085963	B2		6	A61K-038/16	Previous Publ. patent JP 4005242

Abstract (Basic): JP 4005242 A

Artificial blood comprises modified haemoglobin-including liposome upon which an aggregation inhibitor, having a hydrophobic polymer moiety on one end and a hydrophilic polymer moiety on the other, is fixed. The inhibitor has hydrophobic end to the membrane surface so that the polymer is oriented with the hydrophilic end stretching outward from the surface. The liposome is suspended in aq soln of artificial plasma comprising water-sol. polymers.

The aggregation inhibitor is a polyethylene glycol-bound hydrogenated natural phospholipid. The av mol wt of the water-sol polymer is 20,000-70.000. The water-sol polymer is hydroxyethyl starch. The crystalline osmotic pressure of the artificial blood is acceptably adjusted to that of the living body to when it is administered. The colloidal osmotic pressure of the artificial blood is adjusted to that of the living body to when it is administered. The compsn of electrolytes is the same as that of the plasma. The compsn of the electrolytes is the same as that of Ringer soln, lactic acid Ringer soln or Crebs-Ringers soln.

USE/ADVANTAGE - The artificial blood is used as artificially adjusted oxygen-carrying infusions in lifesaving therapy for patients with massive bleeding. Low viscosity of the artificial blood resulting from the action of aggregation inhibitors renders easy the administration to living bodies without the fear of clogging by aggregates in blood capillaries. Also, the extremely low toxicity can realise its massive administration with safety.

In an example, a mixt of hydrogenated soybean lecithin, cholesterol, and myristic acid in CH2Cl2 was concd, 50% hemoglobin aq soln (1000 ml) was added. The resulting liposome (av particle size 0.2 micron) was suspended in saline (10% hemoglobin concn). To this was added saline contg 5% polyethylene glycol-bound hydrogenated soybean lecithin and the resulting liposome was re-suspended in 6% hydroxyethyl starch aq saline (av mol wt 30,000-40,000, 10% hemoglobin

Title Terms: ARTIFICIAL; BLOOD; COMPRISE; HAEMOGLOBIN; LIPOSOME ; POLYETHYLENE; GLYCOL; BOUND; HYDROGENATION; NATURAL; PHOSPHO; LIPID
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